DOCUMENT RESUME

ED 384 433 PS 023 447

TITLE	High School Students Ten Years after "A Nation at Risk": Findings from "The Condition of Education 1994." [No. 1.]
INSTITUTION	National Center for Education Statistics (ED), Washington, DC.
REPORT NO	ISBN-0-16-048054-X; NCES-95-764
PUB DATE	May 95
NOTE	20p.
PUB TYPE	Reports - Research/Technical (143) -- Information Analyses (070)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Academic Achievement; College Attendance; *Course Selection (Students); Drop Out Rate; Educational Trends; Followup Studies; High School Graduates; High Schools; *High School Students; Student Educational Objectives
IDENTIFIERS	*National Assessment of Educational Progress; *Nation at Risk (A)

ABSTRACT

The first in a series, this study uses newly available data to describe the measurable changes in coursetaking, academic achievement, educational aspirations, and college enrollment rates of American high school students in the decade since the 1983 publication of "A Nation At Risk." The study's principal findings are: (1) high school students are taking more courses, particularly in academic areas; (2) students are taking more difficult courses as well as a greater number of courses; (3) according to the National Assessment of Educational Progress, students appear to be learning more in mathematics and science; (4) the increase in academic course-taking does not appear to have adversely affected the achievement of advanced students; (5) for the most part, students with lower abilities do not appear to have suffered as a result of curricular reforms instituted since the publication of "A Nation At Risk"; (6) fewer students are dropping out of high school between 10th and 12th grade than were dropping out a decade ago; (7) students' educational aspirations are increasing; (8) the percentage of graduates going immediately on to college continues to rise; (9) enrollment in college over the past decade has increased despite dramatic increases in college costs between 1982 and 1992; (10) it is difficult to assess how increases in the academic proficiency of 17-year-olds and the percentage of high school graduates going to college affect the academic preparedness of college freshmen--that is, whereas SAT and ACT math scores increased and verbal scores decreased, the percentage of colleges and universities offering remedial instruction or tutoring increased. (Contains 12 references.) (TM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

P-5

NATIONAL CENTER FOR EDUCATION STATISTICS

Findings from

THE CONDITION OF EDUCATION 1994

HIGH SCHOOL STUDENTS TEN YEARS AFTER "A NATION AT RISK"

ED 384 433

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PS 023447

BEST COPY AVAILABLE

U.S. Department of Education
Office of Educational Research and Improvement

NCES 95-764

U.S. DEPARTMENT OF EDUCATION
Richard W. Riley
Secretary

OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
Sharon P. Robinson
Assistant Secretary

NATIONAL CENTER FOR EDUCATION STATISTICS
Emerson J. Elliott
Commissioner

NATIONAL CENTER FOR EDUCATION STATISTICS

"The purpose of the Center shall be to collect, analyze, and disseminate statistics and other data related to education in the United States and in other nations."—Section 406(b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e-1).

May 1995

The text in this booklet was written by Thomas M. Smith of the Data Development Division of NCES and appeared originally in the ***Condition of Education, 1994.*** *Susan P. Choy of MPR Associates, Inc. adapted the content to this format, and Leslie Retallick and Lynn Sally designed the graphics and layout.*

High School Students Ten Years After "A Nation At Risk"

On August 26, 1981 Secretary of Education T.H. Bell created the National Commission on Excellence in Education, directing it to examine and report on the quality of education in the United States. The commission responded in 1983 with a report declaring:

> Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. . . . We report to the American people that while we take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people.[1]

The Commission developed a series of recommendations designed to improve the quantity and quality of education, including improvements to curricular content and the use of instructional time. The goals of these recommendations were to raise the standards and expectations of the Nation's educational system, improve teacher preparation, and raise the level of reward and respect for teaching professionals.

In this first in the series of *Findings from the Condition of Education*, newly available data document the educational advances of American high school students in the decade since the publication of *A Nation At Risk*. Described below are some of the measurable changes in high school coursetaking, student achievement, students' educational aspirations, and college enrollment rates. Other publications in this series provide additional perspectives on progress during this period: No. 2, "The Educational Progress of Black Students," and No. 3, "America's Teachers Ten Years After *A Nation At Risk*."

Changes in Course Taking

- **High school students are taking more courses, particularly in academic areas.**

As of 1990, 42 of the 50 states had raised course requirements for high school graduation since the publication of *A Nation At Risk*, and 47 states had mandated student testing standards.[2] In 1992, public high school graduates earned an average of 2.6 more course units (about 5 semester courses) than their counterparts did in 1982. On average, they earned more units in academic subjects and fewer units in vocational subjects.

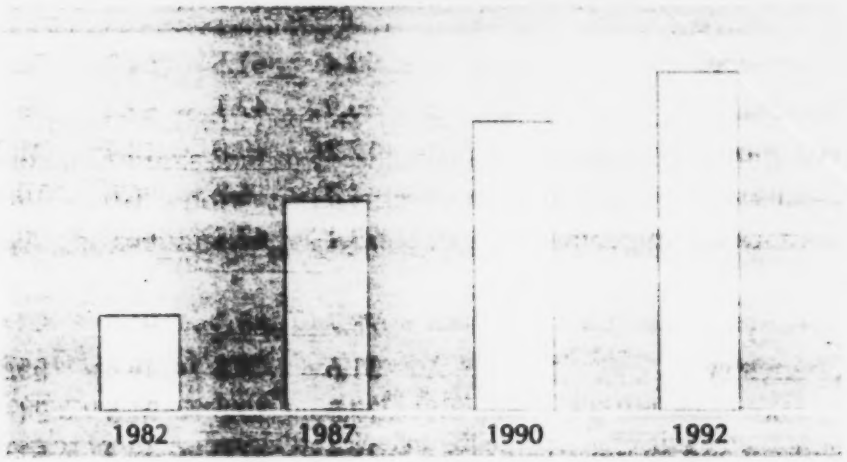
Average course units earned by public high school graduates

Type of course	1982	1987	1992
Total	21.3	22.8	23.9
Academic	14.1	15.6	17.4
Vocational	4.6	4.4	3.8
Personal use	2.6	2.7	2.7

SOURCE: NCES, High School and Beyond Transcript Study, 1987 NAEP High School Transcript Study, and National Education Longitudinal Study Transcripts, 1992.

The National Commission on Excellence in Education recommended that all high school graduates complete 4 units of English, 3 units of science, 3 units of social studies, 3 units of mathematics, and .5 units of computer science. Between 1982 and 1992, the percentage of high school graduates completing the recommended curriculum in English, science, social studies, and mathematics increased dramatically.

Percentage of high school graduates who earned the recommended number of units in English, science, social studies, and mathematics



SOURCE: NCES, High School and Beyond Transcript Study, 1987 and 1990 NAEP High School Transcript Studies, and National Education Longitudinal Study Transcripts, 1992.

- **Students are taking more difficult courses as well as a greater number of courses.**

Since 1982, more students have been taking algebra, geometry, trigonometry, and calculus; and more are taking advance science courses, including chemistry and physics.

College-bound high school graduates (those who as sophomores reported that they expected to earn at least a 4-year degree) took more foreign language courses in 1992 than their counterparts did in 1982. The same was true for graduates who as sophomores expected to attend 2 years of college or less.

BEST COPY AVAILABLE

Percentage of high school graduates who took selected mathematics and science courses

Courses	1982	1987	1990	1992
Geometry	48.4	61.5	64.7	70.4
Algebra II	36.9	47.1	49.2	56.1
Trigonometry	12.2	19.0	18.4	21.1
Calculus	4.3	6.2	6.6	10.1
Algebra II and geometry	29.1	42.4	44.0	50.1
Biology	78.7	88.3	91.6	93.0
Chemistry	31.6	44.8	49.6	55.5
Physics	13.5	19.5	21.5	24.7
Biology and chemistry	28.6	43.0	48.2	53.9
Biology, chemistry, and physics	9.8	16.8	18.9	21.6

SOURCE: NCES, High School and Beyond Transcript Study, 1987 and 1990 NAEP High School Transcript Studies, and National Education Longitudinal Study Transcripts, 1992.

Percentage of high school graduates who earned foreign language course credits

Year of graduation	1 or more credits	2 or more credits	3 or more credits	4 or more credits
All graduates				
1982	49.8	33.7	14.4	5.2
1992	73.9	58.2	26.6	10.6
Expecting to earn a bachelor's degree				
1982	72.5	55.0	25.2	9.4
1992	87.1	73.1	35.6	14.5
Expecting to attend 2 years of college or less				
1982	31.9	17.1	5.3	1.6
1992	52.5	32.8	10.4	2.9

SOURCE: NCES, High School and Beyond Transcript Study, and National Education Longitudinal Study Transcripts, 1992.

- **According to the National Assessment of Educational Progress (NAEP), students appear to be learning more in mathematics and science.**

NAEP mathematics proficiency scores increased between 1982 and 1992 for 9-, 13-, and 17-year-olds. To place this gain in perspective, the difference between the average scores of 13- and 17-year-olds in 1992 was 34 points, or about 9 points for each year of difference in age. Thus, the 9-point increase in the mathematics proficiency of 17-year-olds between 1982 and 1992 appears to be roughly equivalent to one year of age. Science scores also increased for all three age groups between 1982 and 1992. Reading scores in 1992 were about the same as they had been in 1984.

Average proficiency scores

Subject and year	Age 9	Age 13	Age 17
Reading			
1984	211	257	289
1992	210	260	290
Mathematics			
1982	219	269	298
1992	230	273	307
Science			
1982	221	250	283
1992	231	258	294

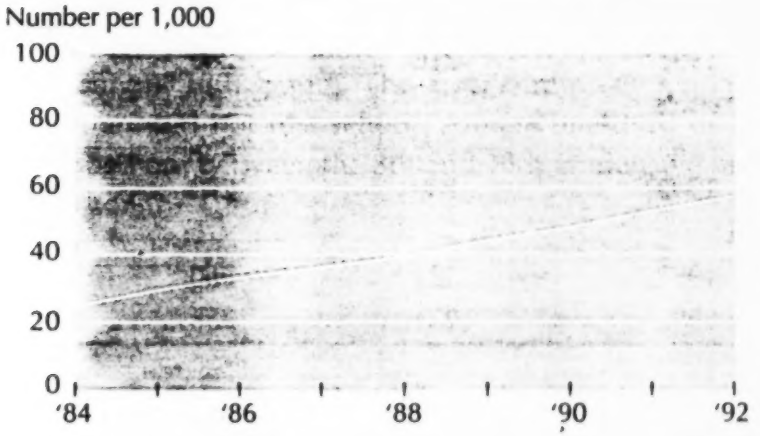
SOURCE: NCES, National Assessment of Educational Progress.

- **The increase in academic course taking does not appear to have adversely affected the achievement of advanced students.**

Based on three separate measures—the number taking Advanced Placement (AP) examinations, NAEP scores, and Scholastic Aptitude Test (SAT) scores—advanced students are doing at least as well, and sometimes better, as they were a decade ago. Since 1984, the proportion of students taking AP examinations has more than doubled. In 1992, 57 out of every 1,000 11th- and 12th-graders took AP examinations, up from 24 in 1984. About two-thirds of all AP examinations taken by 11th- and 12th-graders in 1992 had a score of 3 or higher, the minimum usually needed to qualify for college credit.[3]

NAEP scores indicate greater science proficiency for the highest performing 17-year-old students: the 90th percentile score (the score that 90 percent of students score below) increased by 8 points between 1982 and 1992. The reading and mathematics proficiencies of the highest performing 17-year-old students were about the same in 1992 as in the early 1980s.

Number of 11th- and 12th-graders taking Advanced Placement examinations per 1,000 11th- and 12th-graders



SOURCE: The College Board, Advanced Placement Program, National Summary Reports, 1984–92.

BEST COPY AVAILABLE

90th percentile NAEP scores for 17-year-old students

Assessment	1982	1984	1986	1988	1990	1992
Reading	—	340	—	337	343	338
Mathematics	341	—	343	—	345	345
Science	342	—	345	—	348	350

—Not tested.
SOURCE: NCES, National Assessment of Educational Progress.

The percentage of high school graduates taking the SAT increased from 33 percent in 1983 to 41 percent in 1993 without a decline in the percentage of high scorers. The percentage scoring above 600 increased from 16 percent to 19 percent on the mathematics section and remained stable at 7 percent on the verbal section.[4]

- **For the most part, students with lower abilities do not appear to have suffered as a result of curricular reforms instituted since the publication of *A Nation At Risk*.**

Fewer high school graduates are taking remedial mathematics courses (17 percent in 1992 compared with 33 percent in 1982).[5] Mathematics and science proficiencies (as measured by NAEP) have increased for the lowest performing students: in 1992, the 10th percentile score for 17-year-olds (the score that 10 percent of students score below) was 11 points higher in mathematics and 12 points higher in science than in 1982.

10th percentile NAEP scores for 17-year-old students

Assessment	1982	1984	1986	1988	1990	1992
Reading	—	236	—	242	237	231
Mathematics	256	—	263	—	264	267
Science	222	—	230	—	229	234

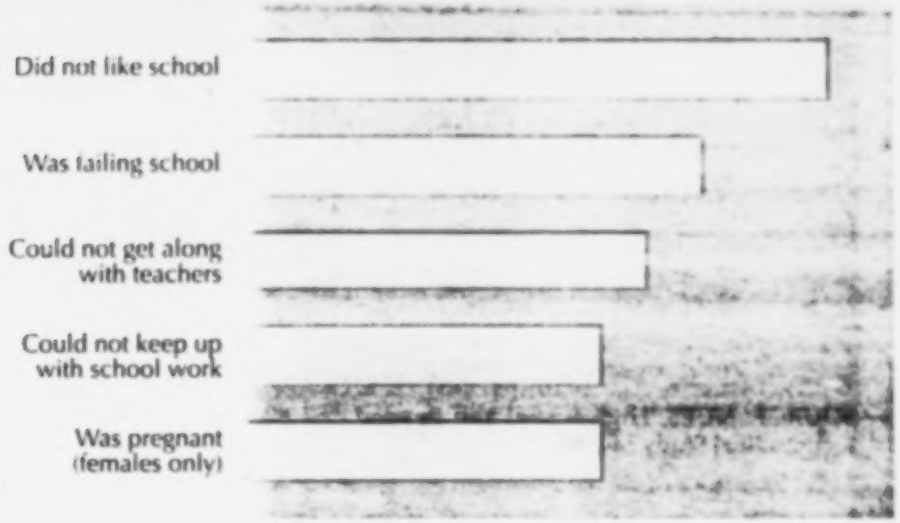
—Not tested.
SOURCE: NCES, National Assessment of Educational Progress.

- **Fewer students are dropping out of high school between 10th and 12th grade than a decade ago.**

The 10th- to 12th-grade dropout rate declined by 5 percentage points between 1980 and 1990. Eleven percent of 1980 high school sophomores left school by the spring of 1982 without a high school diploma or its equivalent; the comparable rate for 1990 sophomores was 6 percent.[6]

The dropout news is not so encouraging for younger students, however. All states mandate compulsory schooling through the age of 16.[7] Nevertheless, a sizable number of students drop out of school before completing the 10th grade. Of the members of the 8th-grade class of 1988, 7 percent had dropped out of school by the spring of 10th grade.[8] The most commonly given reason was that they did not like school. Almost one-third of females who dropped out between the 8th and 10th grade gave pregnancy as a reason for dropping out.

Percentage of 1988 8th-graders who dropped out between 8th and 10th grade who gave various reasons for dropping out


Did not like school
Was failing school
Could not get along with teachers
Could not keep up with school work
Was pregnant (females only)

SOURCE: NCES, National Education Longitudinal Study of 1988.

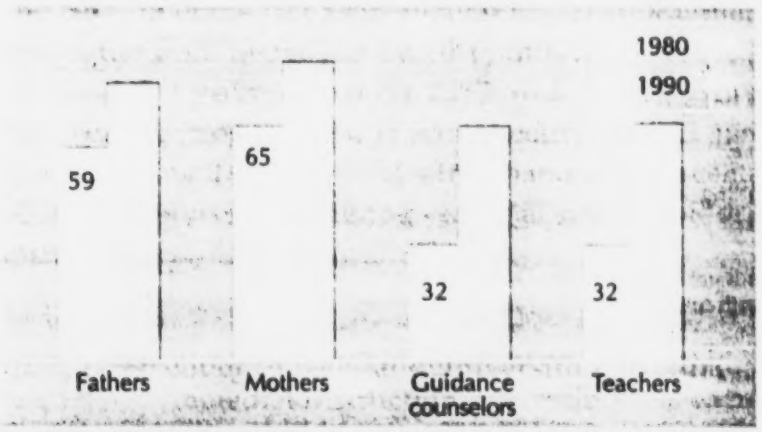
Changes in Educational Aspirations and College Enrollment

- **Students' educational aspirations are increasing.**

The percentage of high school sophomores aspiring to more than a high school diploma increased from 73 percent in 1980 to 90 percent in 1990.[9] Along with students' own heightened aspirations, more parents, guidance counselors, and teachers are advising students to attend college. Even low-achieving students are being advised to go to college. In 1990, 57 percent of sophomores scoring in the lowest test quartile on an achievement test of reading, vocabulary, and mathematics had been advised by a teacher to attend college.[10]

BEST COPY AVAILABLE

Percentage of sophomores advised to go to college

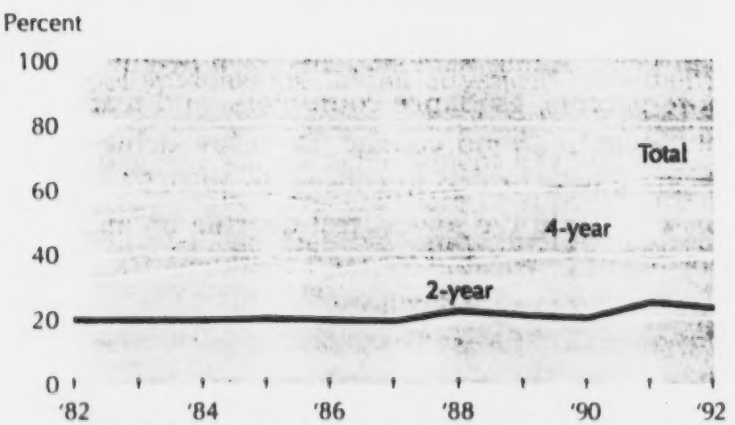


SOURCE: NCES, High School and Beyond and National Education Longitudinal Study of 1988.

- **The percentage of students making the immediate transition from high school to college continues to rise.**

Since most college students enroll immediately after high school, the percentage of high school graduates enrolled in college in the October following graduation is a leading indicator of the proportion of graduates who will eventually enroll.

Percentage of high school graduates enrolling in college in the October after high school graduation



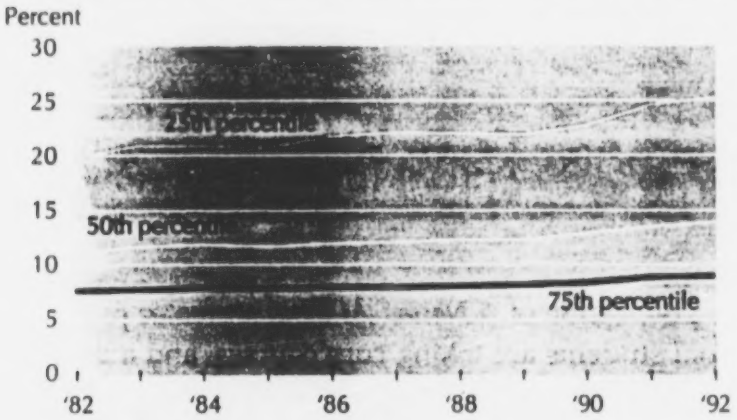
SOURCE: U.S. Department of Commerce, Bureau of the Census, October Current Population Surveys.

BEST COPY AVAILABLE

- **Increased enrollment in college over the past decade has occurred despite dramatic increases in college costs between 1982 and 1992.**

Median family income (among families with children 6–17 years old) has not kept pace with increases in the cost of college. Tuition, room, and board at public institutions of higher education increased from 11 percent of median family income in 1982 to 14 percent in 1992. For those at the 25th percentile of family income, costs at public institutions increased from 20 percent of their income in 1982 to 25 percent in 1992, and at the 75th percentile, from 8 percent to 9 percent.

Average tuition, room, and board at public institutions as a percentage of income of families with children 6–17 years old at selected income percentiles



SOURCE: NCES, Integrated Postsecondary Education Data System and U.S. Department of Commerce, Bureau of the Census, Current Population Survey, March supplement.

- **It is difficult to assess how increases in the academic proficiency of 17-year-olds and the percentage of high school graduates going to college affect the academic preparedness of college freshmen.**

BEST COPY AVAILABLE

On one hand, even though more high school graduates are taking the SAT, average test scores have not fallen. Mathematics scores on the SAT increased by 10 points, and verbal scores decreased by 1 point between 1983 and 1993.[11] American College Testing Program (ACT) scores between 1983 and 1992 show a similar pattern.[12] On the other hand, the percentage of colleges and universities offering remedial instruction or tutoring increased between 1983 and 1992.

Percent of colleges and universities offering remedial instruction or tutoring

	1980–81	1984–85	1988–89	1991–92
4-year colleges	78.9	85.8	89.0	88.6
2-year colleges	83.8	93.4	93.8	90.9

SOURCE: College Entrance Examination Board, *Annual Survey of Colleges.*

SUMMARY

Since the publication of *A Nation At Risk*, a greater proportion of high school students are taking core courses, and a greater proportion are taking high-level courses in those subjects. More high school students are taking advanced placement examinations, and fewer are dropping out between 10th and 12th grade. Mathematics and science achievement have increased since the early 1980s. Finally, a greater share of students are aspiring to and attending college after they graduate from high school.

References

[1]The National Commission on Excellence in Education, *A Nation At Risk: The Imperative for Educational Reform*. Washington, D.C.: April 1983, 5.

[2]R. Coley and M.E. Goetz. *Educational Standards in the Fifty States: 1990*. Princeton, N.J.: Educational Testing Service and U.S. Department of Education, National Center for Education Statistics. *Overview and Inventory of State Requirements for School Coursework and Attendance*. Washington, D.C.: 1992.

[3]The College Board, Advanced Placement Program, National Summary Reports, 1984–1992.

[4]College Entrance Examination Board, *National Report: College Bound Seniors*, 1972–1993.

[5]High School and Beyond Transcript Study, 1987 and 1990 NAEP High School Transcript Studies, and the National Education Longitudinal Study Transcripts, 1992.

[6]High School and Beyond and National Education Longitudinal Study of 1988.

[7]Education Commission of the States, "Compulsory School Age Requirements, March 1992" and unpublished revisions.

[8]National Education Longitudinal Study of 1988.

[9]High School and Beyond and the National Education Longitudinal Study of 1988.

[10]National Education Longitudinal Study of 1988.

[11]College Entrance Examination Board, *National Report: College-Bound Seniors*, 1972–1993.

[12]*Digest of Education Statistics, 1993*, table 132, based on *The American College Testing Program, High School Profile Report*, annual.

For more information, see the following NCES publications:

The Condition of Education, 1994. Washington, D.C.: 1994.

Digest of Education Statistics, 1994. Washington, D.C.: 1994.

Dropout Rates in the United States: 1993. Washington, D.C.: 1994.

America's High School Sophomores: A Ten Year Comparison. Washington, D.C.: 1993.

Forthcoming ***Findings from the Condition of Education:***

No. 4: *The Educational Progress of Hispanic Students*

No. 5: *The Educational Progress of Women*

No. 6: *The Cost of Higher Education*

Order Processing Code:
* 7674

Superintendent of Documents Order Form

Charge your order. It's easy!

To fax your orders (202) 512-2250
To phone your orders (202) 512-1800

❑ **YES,** please send me the following:

____ copies of **America's High School Sophomores: A 10 Year Comparison,** S/N 065-000-00572-7 for $7.50 each ($9.38 foreign).
____ copies of **Condition of Education, 1994,** S/N 065-000-00667-7 for $30 each ($37.50 foreign).
____ copies of **Digest of Education Statistics, 1994,** S/N 065-000-00693-6 for $33 each ($41.25 foreign).
____ copies of **Dropout Rates in the US, 1993,** S/N 065-000-00684-7 for $12 each ($15 foreign).
____ copies of **NAEP 1992 Trends in Academic Progress** S/N 065-000-00672-3 for $41 each ($51.25 foreign).
____ copies of **Projections of Education Statistics to 2005, 1991-92,** S/N 065-000-00699-5 for $14 each ($17.50 foreign).
____ copies of **Youth Indicators: 1993,** S/N 065-000-00611-1 for $11 each ($13.75 foreign).

The total cost of my order is $ _____. Price includes regular shipping and handling and is subject to change.

Company or personal name (Please type or print)

Additional address/attention line

Street address

City, State, Zip code

Daytime phone including area code

Purchase order number (optional)

Check method of payment:
❑ Check payable to Superintendent of Documents
❑ GPO Deposit Account ☐☐☐☐☐☐☐-☐
❑ VISA ❑ MasterCard
☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐
☐☐☐☐ (expiration date) *Thank you for your order!*

Authorizing signature 4/95

Mail To: Superintendent of Documents
P.O. Box 371954, Pittsburgh, PA 15250-7954

Federal Identification Number: 536-002-509

ISBN 0-16-048054-X

United States
Department of Education
Washington, DC 20208–5650

Official Business
Penalty for Private Use, $300